

REMARKS

STATUS OF THE CLAIMS

In accordance with the foregoing, no claims have been amended. Claims 1-6 are pending and under consideration.

No new matter is being presented and reconsideration is respectfully requested.

REJECTIONS OF CLAIMS 1-4 FOR OBVIOUSNESS UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER PRIOR ART FIGURES 2 AND 3 IN VIEW OF SHERWOOD (U.S. PATENT NO. 4,228,475)

The rejections of claims 1-4 are respectfully traversed and reconsideration is requested.

In the Response to Arguments, on page 5 of the Action, the Examiner states that Figs. 1-3 of the Drawings are electrically equivalents, and these figures do not show any patentably distinct connections, since "the different ways of grounding the 0V wire do not carry any patentable value for the same grounding function purpose."

Applicants respectfully disagree.

An embodiment of the present invention is characterized in that the 0V 6 of the circuit system 2, which includes the sensor circuits in the inverter unit 1, is connected to the shield braid 5. This connection lessens the influence of noise upon the circuit system 2, thereby preventing inefficient or improper operation. (See page 5, lines 5-10, of the Specification).

Since the 0V 6 of the circuit system 2 is connected to the earth plate 7 by means of the shield braid 5 of the shielded cable 4, impedance for high frequency, that constitutes the base of the noise, is lowered. Thus, current that is influenced by the noise quickly flows into the earth plate 7, so that the influence of the noise is lessened. (See page 5, lines 11-17, of the Specification).

On page 3, item 7, of the Office Action, the Examiner asserts that Sherwood discloses "a ground monitoring system comprising cables (10, 10', 10'') with a ground wire connected to sensor circuits (35, 35', 35'')...". However, claim 1, for example, recites connecting a 0V of the circuit system to a shield braid of a shielded cable, which is connected to an earth plate. (See Fig. 1). Thus, in the present invention, a ground wire is not connected directly to the sensor circuit, as (according to the Examiner) is disclosed by Sherwood.

The ground monitoring circuit in Sherwood includes a switch house 42 with a sensor circuit 35a that is connected between pilot line 18' and common ground line 45'. (Column 3,

lines 32-39 and Fig. 2). Sensor circuits 35, 35a and 35b are connected to ground wires 16, 16' and 16'' and the pilot cables 18 and 18' in the electric power distribution cable 10. Cable 10, as shown in Fig. 1, does not have a shield braid. Instead it is covered with a sheath 20 of elastomeric insulation. Thus, the sensor circuit in Sherwood is connected directly to a ground line. (See Fig. 2 of Sherwood). This creates precisely the problem which the present invention seeks to overcome.

Claim 1 recites connecting a 0V of a circuit system, including a sensor circuit for a sensor in an inverter unit driving a motor, with a shield braid of a shielded cable connecting the sensor circuit and the sensor. Similarly, claim 2 recites the sensor circuit is connected with the sensor by a shielded cable having a shield braid, and the shield braid is connected to a 0V of the circuit system and an earth plate outside the inverter unit.

Therefore, the 0V 6 of the control circuit system 2 in the inverter unit 1, of the present invention, need not be connected to the ground by means of a separate wire. (See page 5, lines 23-25, of the present application).

In light of the arguments above, it is submitted that Prior Art Figs. 2 and 3 and Sherwood do not disclose the features recited in claims 1 and 2. Claims 3 and 4 depend from claim 2 and, thus, it is respectfully submitted that claims 1-4 are patentable over the references.

REJECTIONS OF CLAIMS 1-4 FOR OBVIOUSNESS UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER JP 2002-281765 IN VIEW OF JP 2001-286152, JP 2000-195685 OR JP 10-135681

The rejections of claims 1-4 are respectfully traversed and reconsideration is requested.

On page 4 of the Action, the Examiner states that it would be obvious to one of ordinary skill in the art to connect the ground wire of JP 2002-281765 in a manner taught by JP 2001-286152, JP 2000-195685 or JP 10-135681, to produce the same grounding result.

JP 2002-281765 discloses the use of a shielded cable where one end is connected to a ground pole 26. (Abstract). However, the inverter, as depicted in Fig. 1, is connected to a completely different earth plate 28.

JP 2001-286152 discloses a grounding structure for an inverter system in which earth terminals 1E and 2E of the inverter unit box and the box of the motor, respectively, are connected to each other by a conductive member 43. (Abstract). However, the inverter unit box and the box of the motor are each grounded to individual earth plates 15 and 33. (See Fig. 1).

JP 2000-195685 discloses an earth connecting structure in which an earth connection 120c is connected to the earth side of a power source, and the bus bar case 21 is assembled to a metal base 122. The earth connecting part 120c and the base 122 are connected to ground by a screw 126. (Abstract). However, as the Examiner points out, the structure disclosed by JP 2000-195685 merely discloses the connection of an earth connecting portion 120c and a base 122.

JP 10-135681 discloses an earth connection in which the core of a coaxial cable 11 is connected between the output terminal of an inverter 3 and the input terminal of an AC motor 5. Both ends of the outer conductor of the cable 11 are connected to the respective frames of the inverter and motor. However, the respective frames are each individually connected to ground.

In contrast, the present invention discloses a grounding method and apparatus in which a sensor circuit is connected with the sensor by a shielded cable having a shield braid, and the shield braid is connected to a 0V of the circuit system and an earth plate outside the inverter unit.

Therefore none of the cited references, alone or in combination, teach or suggest the features of independent claims 1 and 2.

Claim 3 and 4 depend from claim 2 and inherit the patentable recitations thereof. Thus, it is respectfully submitted that claims 1-4 patentably distinguish over the prior art.

PREVIOUSLY ADDED CLAIMS 5 AND 6

The Examiner makes no mention of claim 5 and 6, newly presented in the Amendment filed August 17, 2005.

However, claim 5 depends from independent claim 2 and inherits the patentable recitations thereof. Thus, it is respectfully submitted that claim 5 patentably distinguishes over the prior art.

Moreover, independent claim 6 recites means for connecting a 0V of a circuit system, including a sensor circuit for a sensor in an inverter unit driving a motor, with a shield braid of a shielded cable connecting the sensor circuit and the sensor; and means for connecting the shield braid of the shielded cable to an earth plate outside the inverter unit.

Therefore, for at least the reasons provided above for independent claim 1, it is respectfully submitted that independent claim 6 patentably distinguishes over the prior art.

CONCLUSION

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. Further, all pending claims patentably distinguish over the prior art. There being no further outstanding objections or rejections, the application is submitted as being in condition for allowance, which action is earnestly solicited.

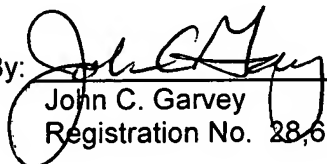
If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney to discuss resolution of such issues.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 2-16-06

By: 
John C. Garvey
Registration No. 28,607

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501